

IN THE CLAIMS

1. A high pressure post valve removably attachable to a high pressure gas cylinder having a gas outlet opening, said valve comprising:

a monolithic valve body having an internal aperture for receiving a valve actuator for internal connection and seating within the valve body, said valve body having an integral threaded extension for threadedly connecting the valve body to the gas cylinder, said threaded extension including a gas inlet orifice in alignment with the internal aperture for the passage of high pressure inlet gas to the valve actuator, and said valve body including an integral, circular valve body seat including a planar valve body seating surface disposed above and extending radially outwardly from the threaded extension for seating the valve body against the gas cylinder outlet opening, said valve body formed from circular metal bar stock.

2. A high pressure post valve in accordance with claim 1, wherein the gas inlet orifice is in longitudinal alignment with the internal aperture in the valve body, and wherein the valve body includes a gas outlet orifice disposed at a right angle to said gas inlet orifice and said internal aperture in the valve body.

3. A high pressure post valve in accordance with claim 1, wherein the valve actuator is threadedly connected to the valve body within the internal aperture in the valve body.

4. A high pressure post valve in accordance with claim 1, wherein the valve actuator includes an annular valve seat for seating against a valve seat material such that seating of the actuator valve seat against the valve seat material prevents the flow of gas through the valve.

5. A high pressure post valve in accordance with claim 4, wherein the valve seat material is composed of a polymer or elastomer.

6. A high pressure post valve in accordance with claim 4, wherein the actuator valve seat comprises brass.

7. A high pressure post valve in accordance with claim 1, wherein the circular metal bar stock material that comprises the valve body seat is not reduced in diameter or is reduced in diameter to remove about 10% by weight or less material to form the circular valve body seat.

8. A high pressure post valve in accordance with claim 4, wherein all of the valve seat material is disposed below the gas inlet orifice.

9. A high pressure post valve in accordance with claim 1, wherein the valve seat includes exterior threads adjacent to mating threads cut in an adjacent surface of the valve body so that rotational movement of the valve seat raises or lowers the valve seat with respect to the valve seat material.

10. A high pressure post valve in accordance with claim 1, further including a filter disposed within the gas inlet orifice for removing solid particles from the high pressure gas entering the gas inlet orifice.

11. A method of forming a high pressure post valve including a monolithic valve body and a valve actuator for internal connection and seating within the valve body comprising:

forming metal circular bar stock to provide a monolithic valve body including an internal opening for receiving the valve actuator, and having predominantly planar side surfaces, and a circular threaded extension for connection to a high pressure gas cylinder, said valve body including an integral, circular valve body seat extruding radially outwardly from the valve body between the threaded extension and the planar side surfaces for seating the valve body against gas cylinder structure surrounding the gas cylinder outlet opening, said threaded extension including a gas inlet orifice in alignment with said internal aperture for the passage of inlet gas to the valve actuator.

12. A method in accordance with claim 11, wherein the gas inlet orifice is in longitudinal alignment with the internal aperture in the valve body, and wherein the valve body includes a gas outlet orifice disposed at a right angle to said gas inlet orifice and said internal aperture in the valve body.

13. A method in accordance with claim 11, wherein the valve actuator is threadedly connected to the valve body within the internal aperture in the valve body.

14. A method in accordance with claim 11, wherein the valve actuator includes an annular valve seat for seating against a valve seat material such that seating of the actuator valve seat against the valve seat material prevents the flow of gas through the valve.

15. A method in accordance with claim 14, wherein the valve seat material comprises a polymer or elastomer.

16. A method in accordance with claim 14, wherein the actuator valve seat comprises brass.

17. A method in accordance with claim 11, wherein the circular metal bar stock material that comprises the valve body seat is not reduced in diameter or is reduced in diameter to remove about 10% by weight or less material to form the circular valve body seat.

18. A method in accordance with claim 14, wherein all of the valve seat material is disposed below the gas inlet orifice.

19. A method in accordance with claim 11, wherein the valve seat includes exterior threads adjacent to mating threads cut in an adjacent surface of the valve body so that rotational movement of the valve seat raises or lowers the valve seat with respect to the valve seat material.

20. A high pressure post valve removably attachable to a high pressure gas cylinder having a gas outlet opening, said valve comprising:

a valve body having an internal aperture for receiving a valve actuator for internal connection and seating within the valve body, said valve body having an integral threaded extension for threadedly connecting the valve body to the gas cylinder, said threaded extension including a gas inlet orifice in alignment with the internal aperture for the passage of high pressure inlet gas to the valve actuator, said gas inlet orifice containing a filter disposed therein for removing solid particles entrained in the gas entering the gas inlet orifice.

21. A high pressure post valve in accordance with claim 20, wherein the filter disposed within the gas inlet orifice is in longitudinal alignment with the internal aperture in the valve body, and wherein the valve body includes a gas outlet orifice disposed at a right angle to said gas inlet orifice and said internal aperture in the valve body.

22. A high pressure post valve in accordance with claim 21, wherein the filter is a sintered metal filter that permits gas to pass therethrough and retains solids.

23. A high pressure post valve in accordance with claim 22, wherein the filter is sintered metal.

24. A high pressure post valve in accordance with claim 23, wherein the filter is sintered bronze.